

U.S. Patent Application Serial No. 10/647,237  
Response filed November 17, 2005  
Reply to OA dated June 21, 2005

**REMARKS**

Claims 1-21 are pending in this application. An amendment has been proposed herein canceling claim 2 without prejudice or disclaimer, and amending claims 1, 5, 6, 9, 15, 20 and 21. Upon entry of this amendment, claims 1 and 3-21 will be pending. Minor amendments are also made to the specification. Entry of this amendment and reconsideration of the rejections and objections are respectfully requested.

No new matter has been introduced by this Amendment. Support for the amendments to the claims is discussed below.

**The disclosure is objected to because of informalities. (Office action page 2)**

The objection is overcome by the amendments to the specification, as discussed below.

Regarding page 3, second-to-last line: This has been amended: “to attain small ~~in~~ size and ~~lower in~~ low loss ....”

Regarding page 5, line 23 ([sic], should be 13): The spelling of parallelepiped has been corrected.

Regarding page 6, line 2: Applicant respectfully disagrees with the Examiner that the word “respectively” is needed here. “Respectively” is only needed to indicate a correspondence in the **order** of items, and there is no order in “two XY faces”. Accordingly, no amendment has been made.

Regarding page 7, line 4: Applicant has amended the specification to read: “and it ~~can be~~

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used such a block is suitable for the present invention.”

Regarding page 7, last paragraph, first line: Applicant has amended the specification as suggested by the Examiner, to include the reference to Fig. 2A.

Regarding page 8, line 3: Applicant has amended the specification to read: “A lump piece of the MgO single crystal is cut ...” Applicant submits that the meaning of “lump” would be understood by one of skill in the art, but that “piece” is a preferable term.

Regarding paragraph at page 11, line 13: Applicant maintains that “bent” is a grammatically correct term, being a gerund/adjective. However, for clarity, Applicant has replaced the word “bent” with --oriented-- in the expressions “has a face of 45 degrees bent” and “has a face of 90 degrees bent”. For example: “A single crystal MgO block 201 is a rectangular parallelepiped block which is bent at a right angle, and has a face of oriented at 45 degrees bent to the XY face and YZ face, and oriented at 90 degrees bent to the XZ face.” A corresponding amendment to use “oriented” in the claims is discussed below. Applicant submits that this replacement of terms does not represent new matter. That the face is “oriented at 45 degrees”, etc., is readily apparent from Fig. 4, and would also be understood from the usage of the original term “bent”. Applicant notes that the meaning of the word “bent” in the present specification is not that of one dictionary definition of “bent”: “changed by bending out of an original straight or even condition” (Websters Ninth New Collegiate Dictionary). Clearly, the single crystals in the present specification are not subjected to bending to form the illustrated structures.

A reference to the X, Y and Z axes in Fig. 3 has been added in the paragraph on page 10, line

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A reference to reference labels 211 and 212 in Fig. 4 has been added in the paragraph beginning at page 11, line 13.

**Claims 1-19, 20, and 21 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. (Office action pages 2-3)**

The rejection is overcome in part by the amendments to the claims, and traversed in part, as discussed below.

The Examiner states that in claims 1 and 20, “four or more faces” is inconsistent with “the recitation of ‘the (single) face.’ However, “the face (001), (100) or (010)” in claim 1 is **never recited to be a “single” face**. The claim only recites that the block has a surface of this face—there clearly are inherently other faces to any block, since a block is a 3-dimensional object. Therefore, there is no inconsistency. However, for clarity, Applicant has amended the claims to more positively recite the other faces.

The Examiner states that in claim 2, the recitation does not properly recite the “bend” structure (i.e., “45 degrees bent structure”). The Examiner states that the bent structure requires that the first and second MgO blocks be connected. This portion of the rejection is respectfully traversed.

Applicant believes, based on the Examiner's comments, that the Examiner may have

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misunderstood the structure recited in the claims. Fig. 4 shows a “single crystal MgO block” having an overall right angle “bent” structure, and having the face “oriented at a 45 degree angle” structure (as amended, see below) (see page 11, lines 13 and ff.). This structure, however, does **not**, in itself, require connection of the first and second block, as stated by the Examiner. Applicant believes that the Examiner may have misinterpreted the right angle “bent” structure as two blocks coming together. In Fig. 4, the first block is 201 and the second block, having the superconducting film, is 206 (page 13, lines 15-23). The right angle “bent” structure and the face “oriented at a 45 degree angle” are independent of the connection of the second block. Therefore, no amendment has been made in response to this portion of the rejection.

However, Applicant has amended the claims for clarity, amending the recitation of “45 degrees bent structure” to “face oriented at a 45 degree angle ...”. This recitation is now seen in claims 1 and 20, which have been amended to incorporate the limitations of claim 2. The specification has been correspondingly amended, as discussed above. This structure is shown in Fig. 4, and this recitation is explained in the specification on page 11, lines 19-23.

The Examiner states that claim 15 contains the trademarks Kovar and Invar. Claim 15 is amended to replace these terms with the generic terminology.

The Examiner indicates that several phrases in claim 20 are unclear. These phrases have been amended accordingly.

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**The following claims are found objectionable for reasons set forth below. (Office action page 3)**

The objections are overcome by the amendments to the claims.

The Examiner states that in claim 2 there is a redundant recitation of the superconducting film covering the second MgO block. The wording in original claim 2, now incorporated into claims 1 and 20, has been amended to correct an error, changing “said surface of said **second** single crystal magnesium oxide block” to --said surface of said **first** single crystal magnesium oxide block--.

In claim 5, the Examiner suggests replacing “formed” with –provided–. Claim 5 has been amended in this manner.

The Examiner requests rewording of the alternative recitation in claims 6, 9 and 15. These claims have been amended as suggested.

**Claims 1, 3, 20, 21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kintaka et al in view of Matsuura et al.**

The rejection is overcome by the amendment to the claims.

Claim 1 has been amended to incorporate the limitation of claim 2, and claim 2 has correspondingly been canceled without prejudice or disclaimer. Claim 1 is additionally amended to overcome the rejection under 35 U.S.C. 112, second paragraph, as discussed above. The Examiner has indicated that claim 2 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph. Applicant submits that claim 1, as amended, has the scope of

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original claim 2.

Similarly, claim 20 has been amended to add method steps and limitations corresponding to the limitations of claim 2. That is, the steps of preparing the second single crystal magnesium block, and of forming the second copper oxide superconducting film, are recited. Claim 21 has been amended for proper antecedent basis from claim 20. Support for the amendment to claim 20 may be found in claim 2, and in the specification on page 13, lines 12-20.

Allowance of claims 1, 3, 20 and 21 is therefore respectfully requested.

**Claims 2, 4-19 are would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. §112, second paragraph, and to include the limitations of the base claim and any intervening claim. (Office action page 5)**

As discussed above, claim 2 has been canceled without prejudice or disclaimer, and the limitations of claim 2 have been incorporated into claim 1. Claim 9 has been amended to depend from claim 1. Allowance of pending claims 1 and 3-19 is respectfully requested.

In view of the aforementioned amendments and accompanying remarks, the claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the

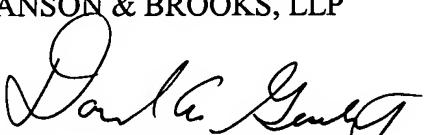
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Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Petition for a two-month Extension of Time

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